FIG. 1

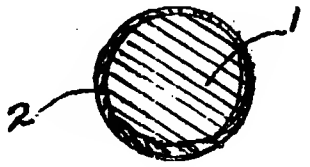

FIG 2

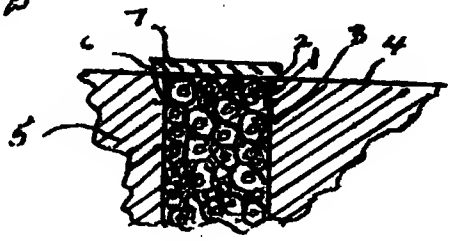

FIG. 3

Paste ID	Filler (wt%)	Resin (%)	Reflow condition	Electrical (mean/st'd)	Mechanical (mean/st'd)	Remark
AgCu01	Ag & Cu (>93)	epoxy	150C,25psi 30 min	0.00040 (0.00002) IN OHMS	4.3(0.9) IN Lbs	commercial Paste
BiSn48	BiSn/Cu (68)	epxy(56) phxy(10) flux(4)	188C,50 psi 30 min	0.00041 (0.00006)	6.7(0.5)	medium flow resin
BiSn49	BiSn/Cu (76)	epxy(43) lim-ox(43) phxy(10) flux(4)	188C,25psi 30 min	0.00027 (0.00004)	5.4(0.9)	high flow resin
BiSn53	BiSn/Cu (77)	epxy(43) lim-oc(43) phxy(10) flux(4)	188C,25psi 30 min	0.00023 (0.00003)	5.1(0.3)	high flow resin
BiSn54	BiSn/Cu (81)	lim-ox(88) epxy(4) phxy(4) flux(4)	188C,25psi 30 min	0.00018 (0.00002)	3.4(0.3)	very high flow resin

jc584 U.S. PTO
09/512400
02/24/00

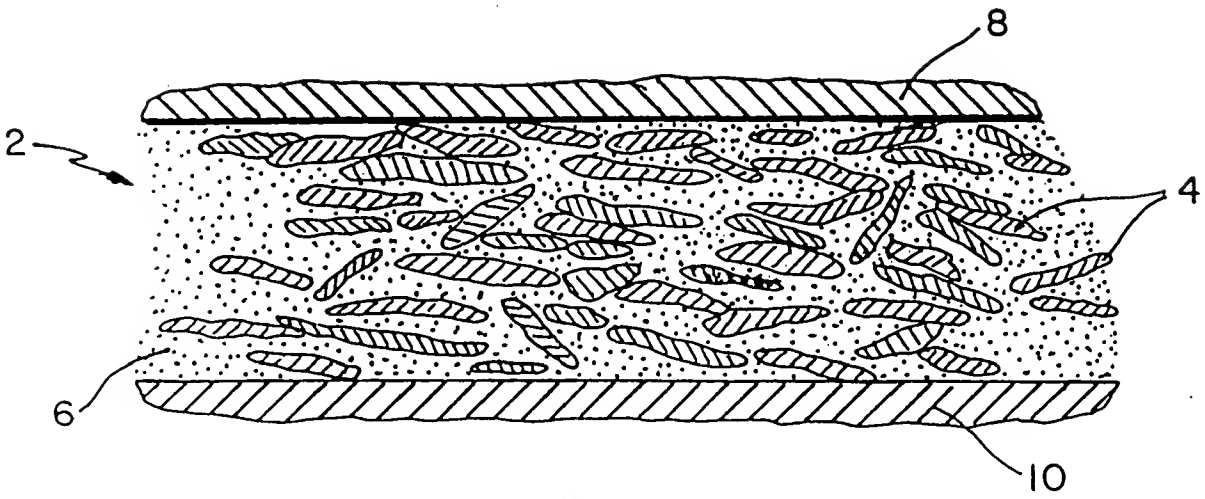

FIG. 1

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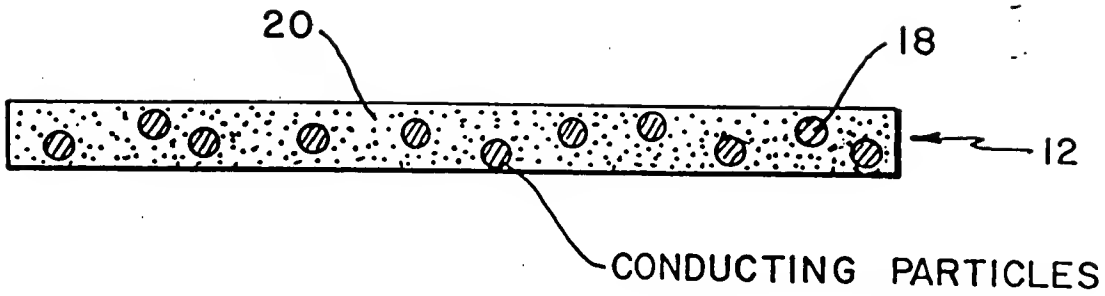
FIG. 2A



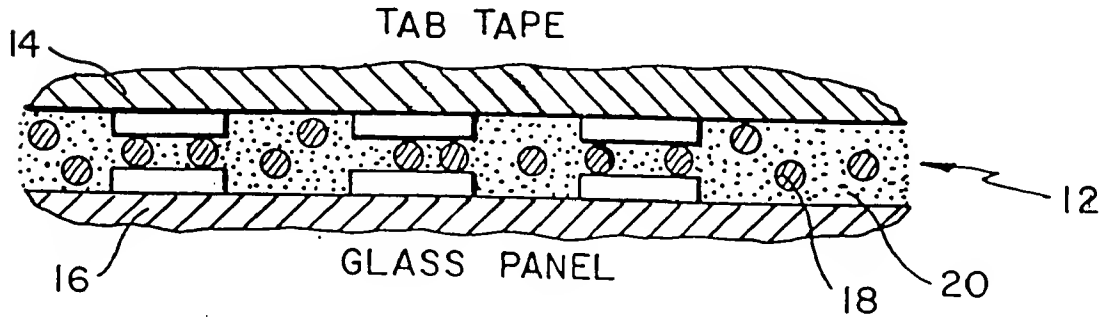


FIG. 2B

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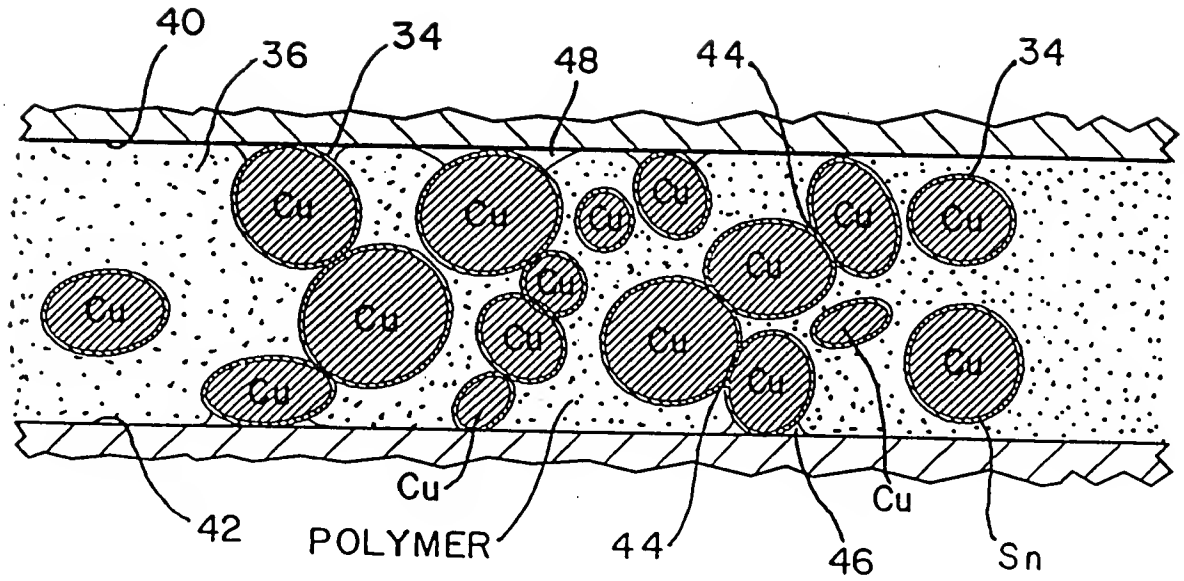


FIG. 3

IBM Confidential

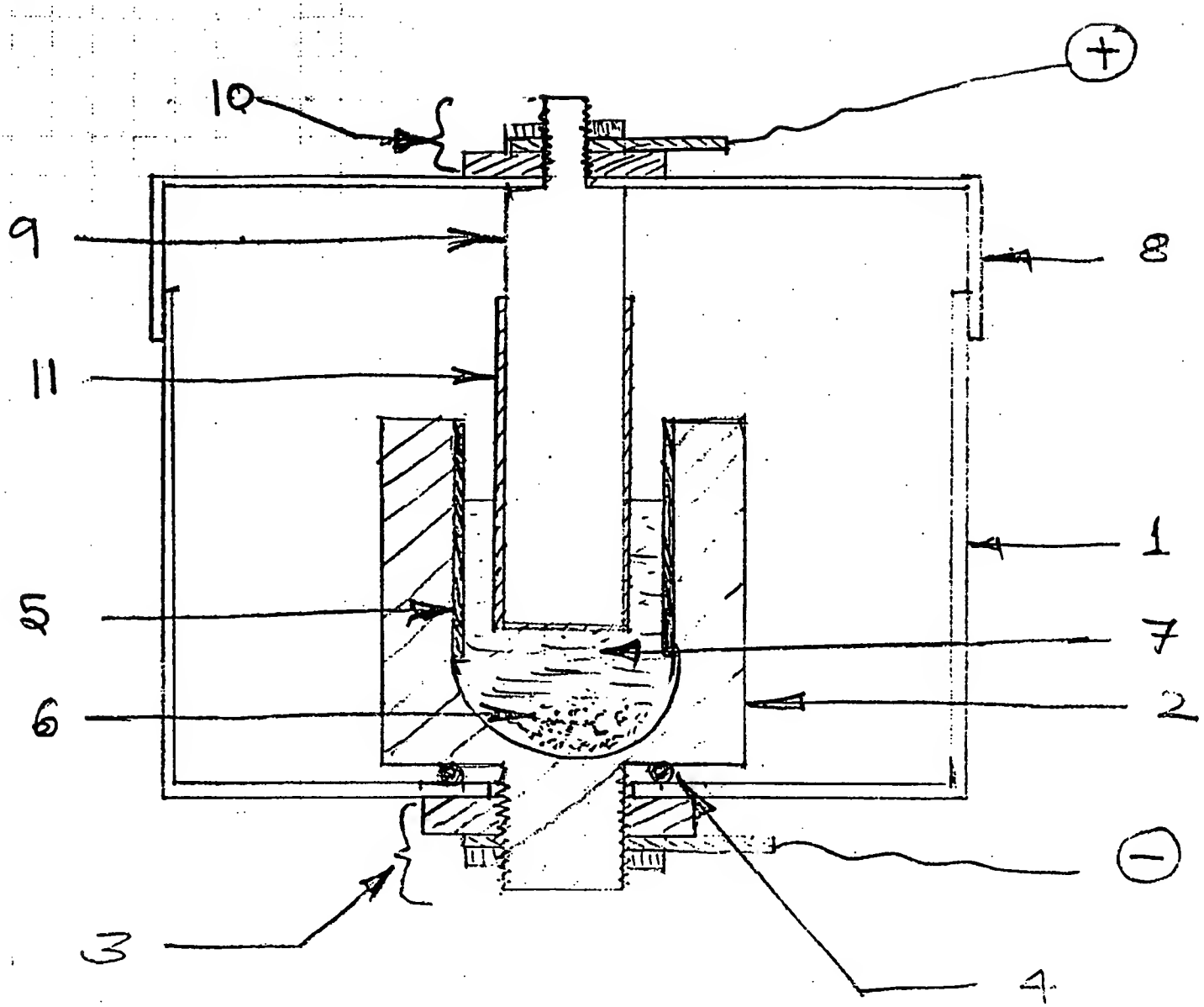


FIGURE 4

SUBJECT

IBM Thomas J. Watson Research Center

BY	DATE	FILE	SECTION	SHEET OF

990-0468-0 (10/89)

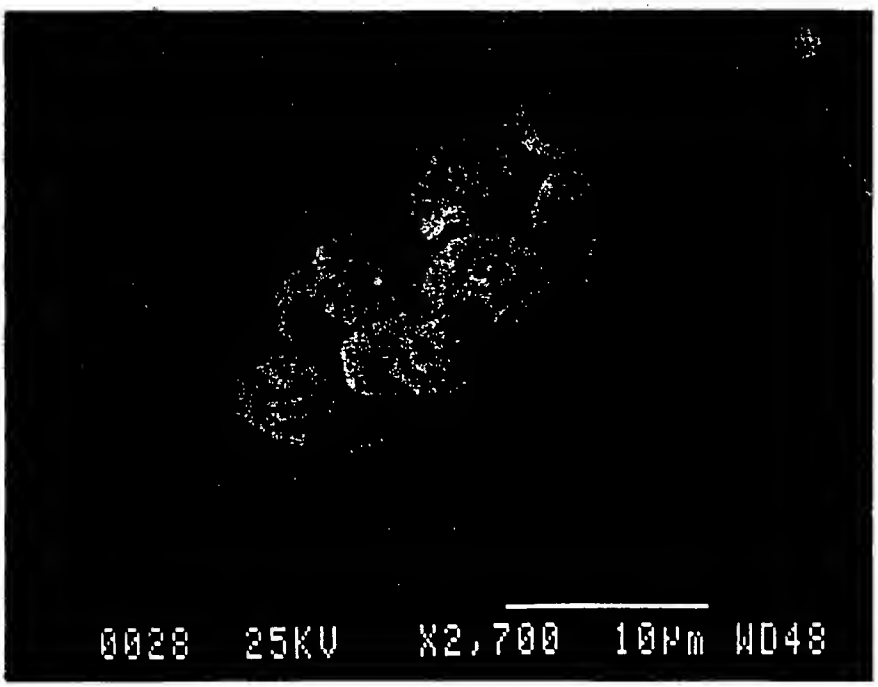


FIGURE 5

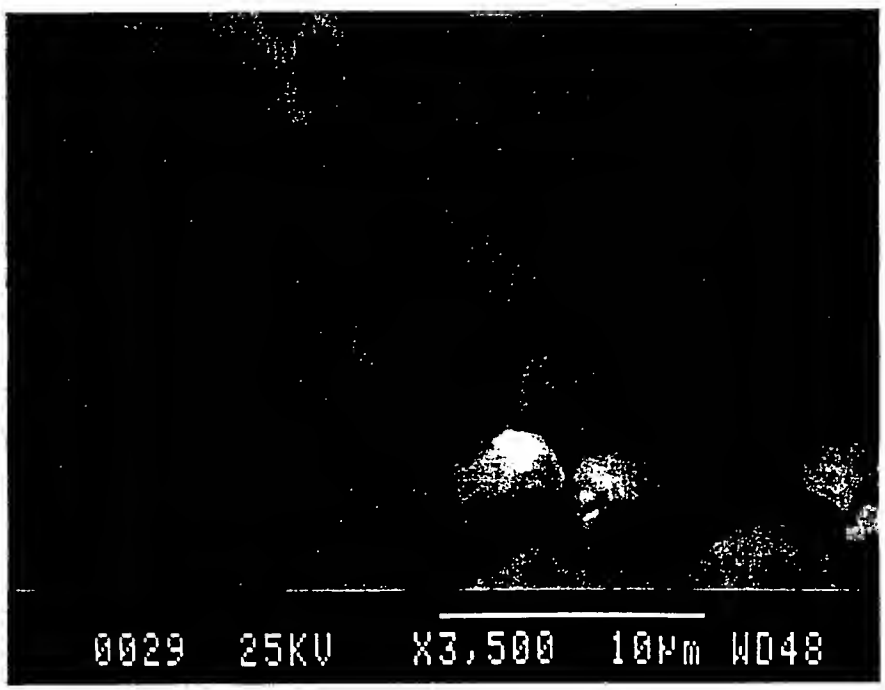
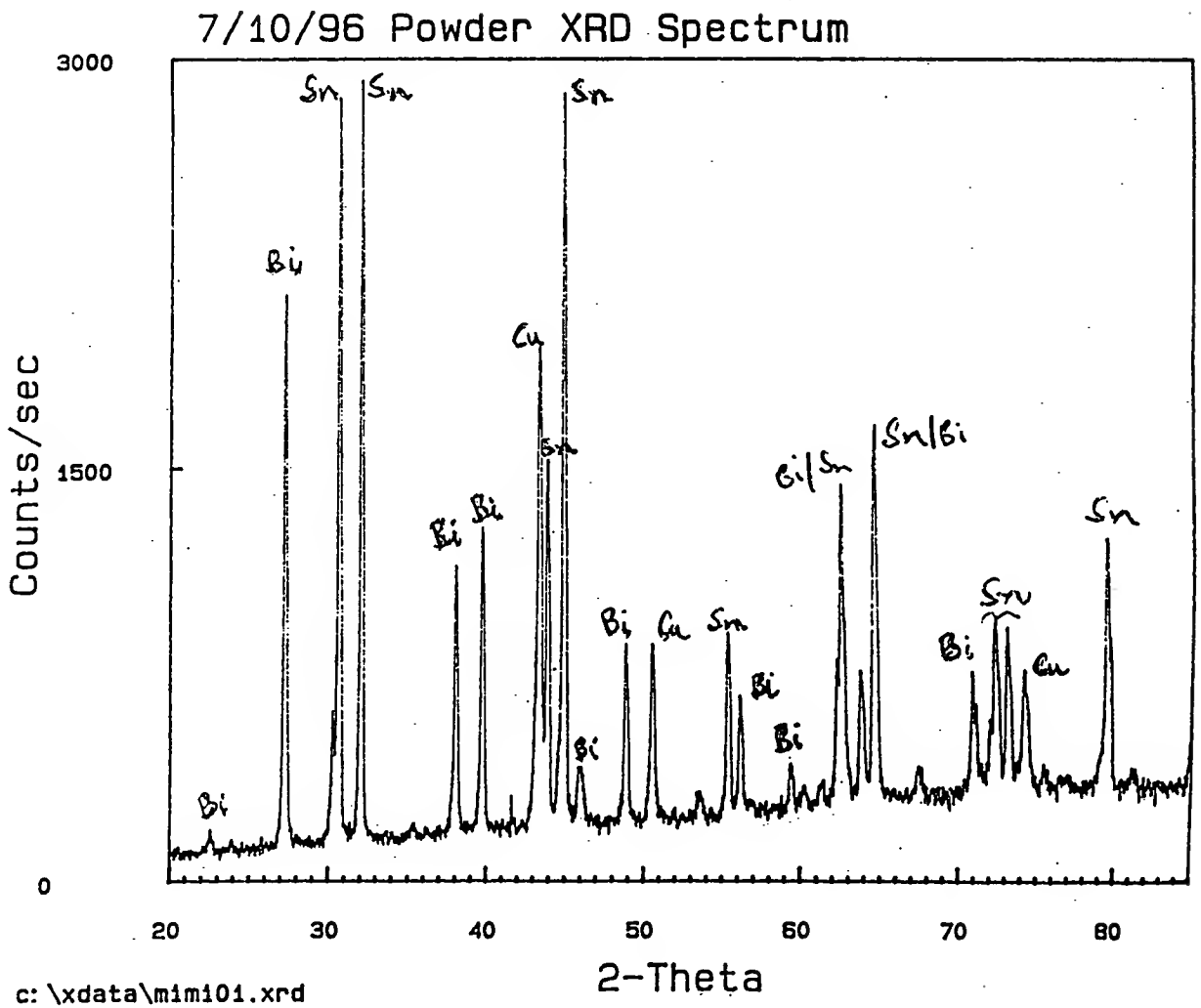


FIGURE 6

FIGURE 8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Counts/sec
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Sn
Sn
Bi
Cu
Bi
Bi
Bi
Bi
Cu
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Bi/Sn
Sn/Bi
Bi
Sn
Cu
Sn
20
30
40
50
60
70
80
2-Theta
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FIGURE 9 S.K. KANG ET AL.

DSC
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96/07/01 13:17

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(7.320 mg)
<Reference>

0.000 mg

<Comment>
Bi/Sn Run #1

<Sampling>
0.5 sec

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<Gas>
n2 0.0 ml/min
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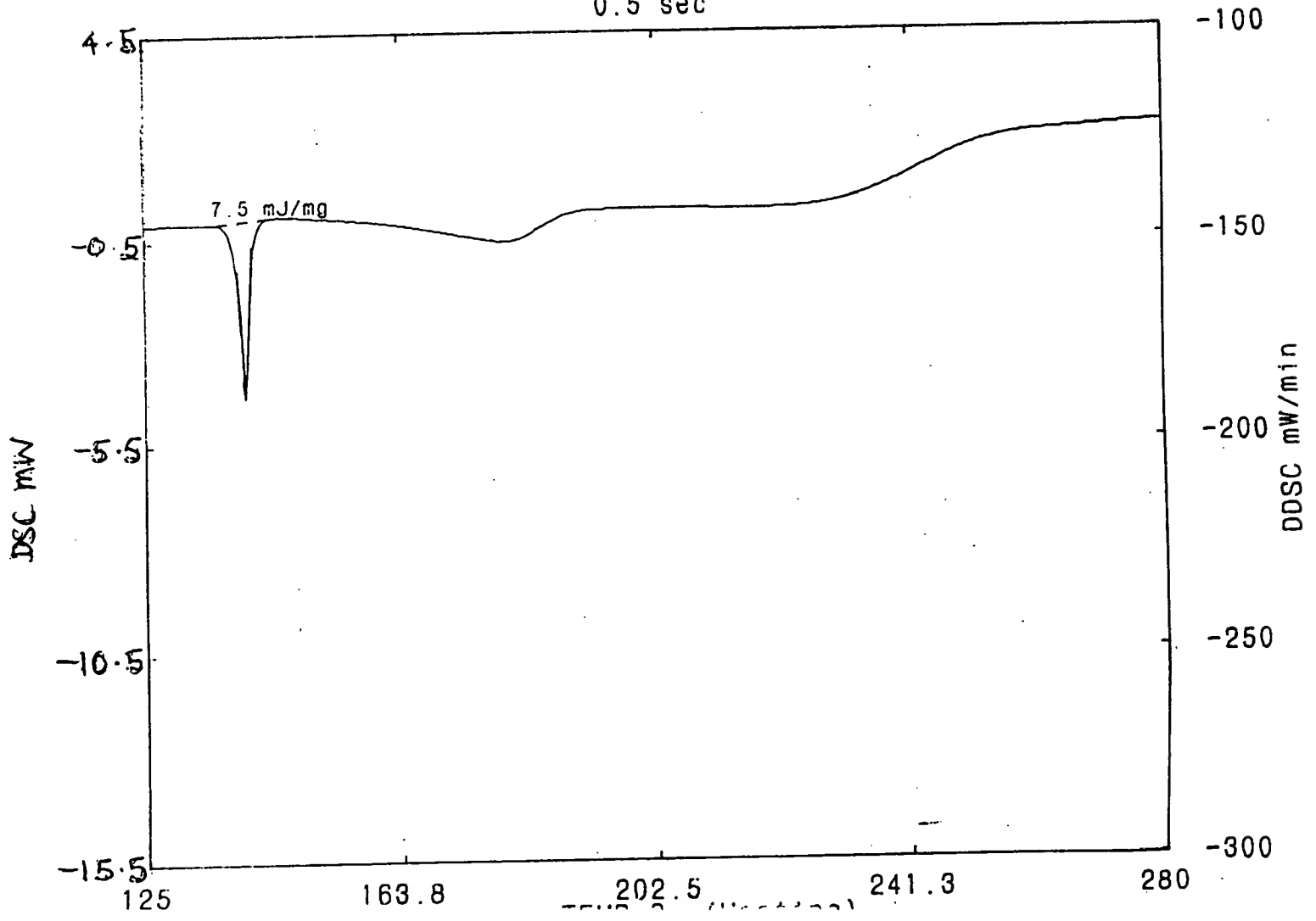
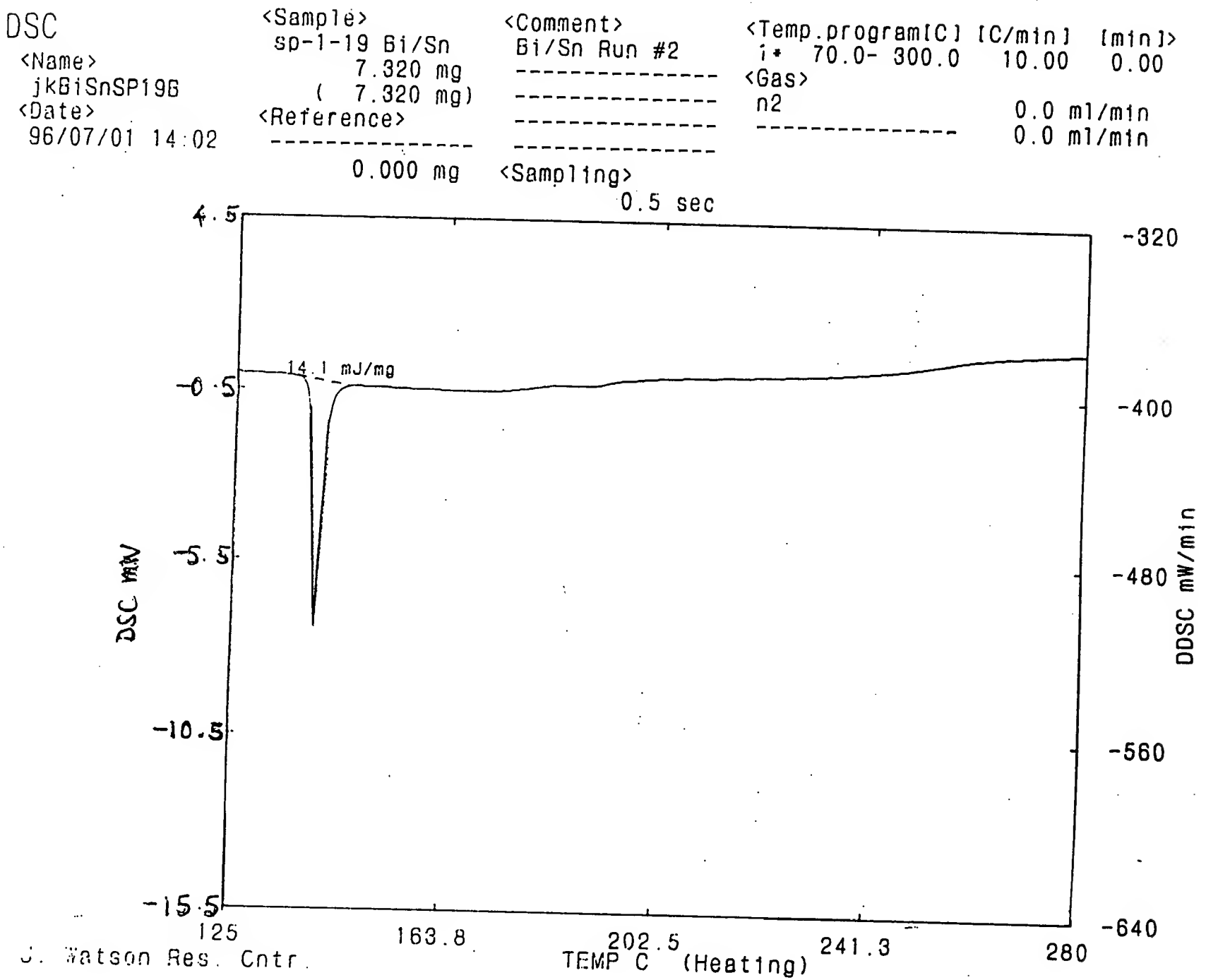


FIGURE 10 . S.K. KANG ET AL.



Document 2004-0205-0

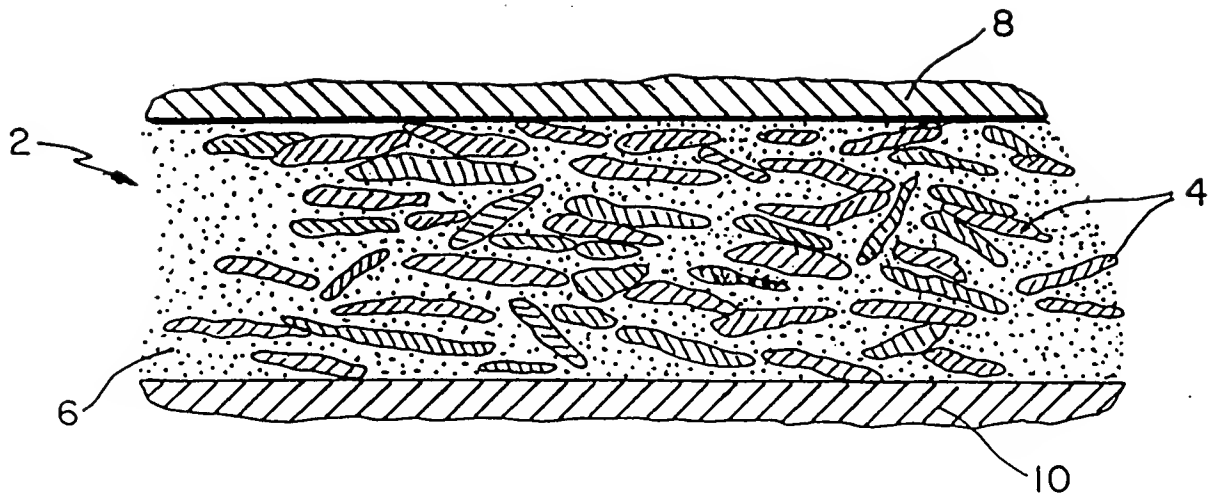


FIG. 1

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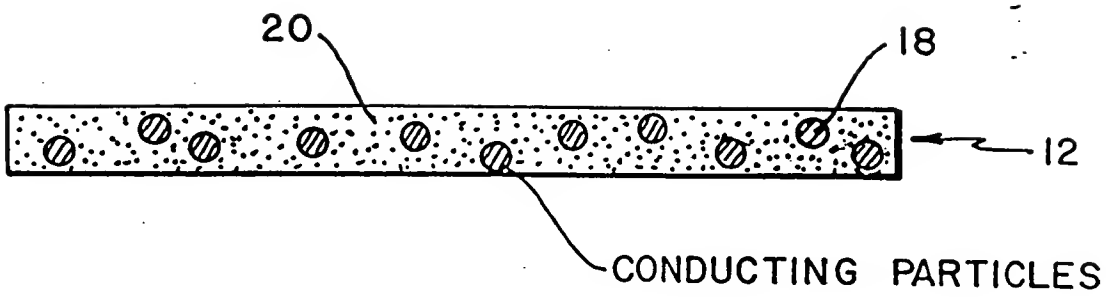
FIG. 2A



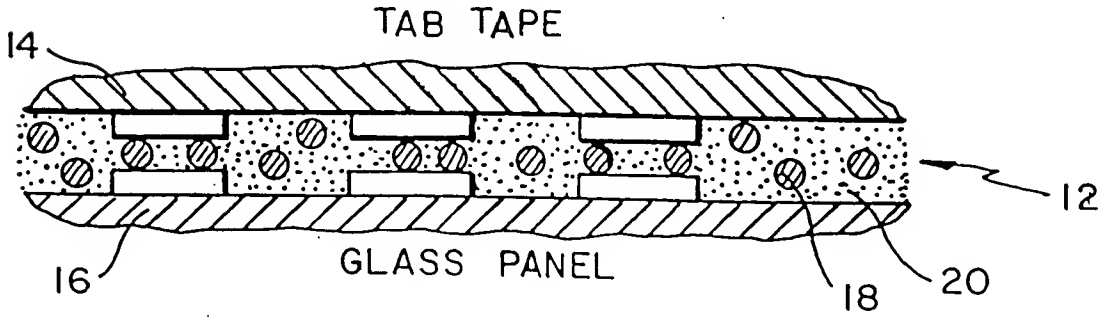


FIG. 2B

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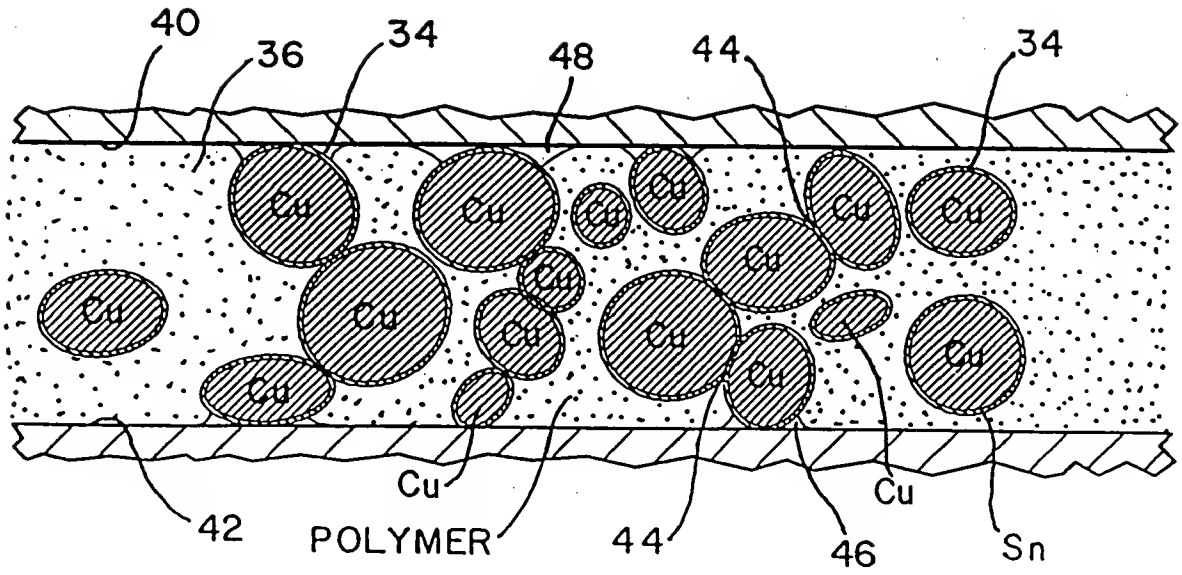

FIG. 3

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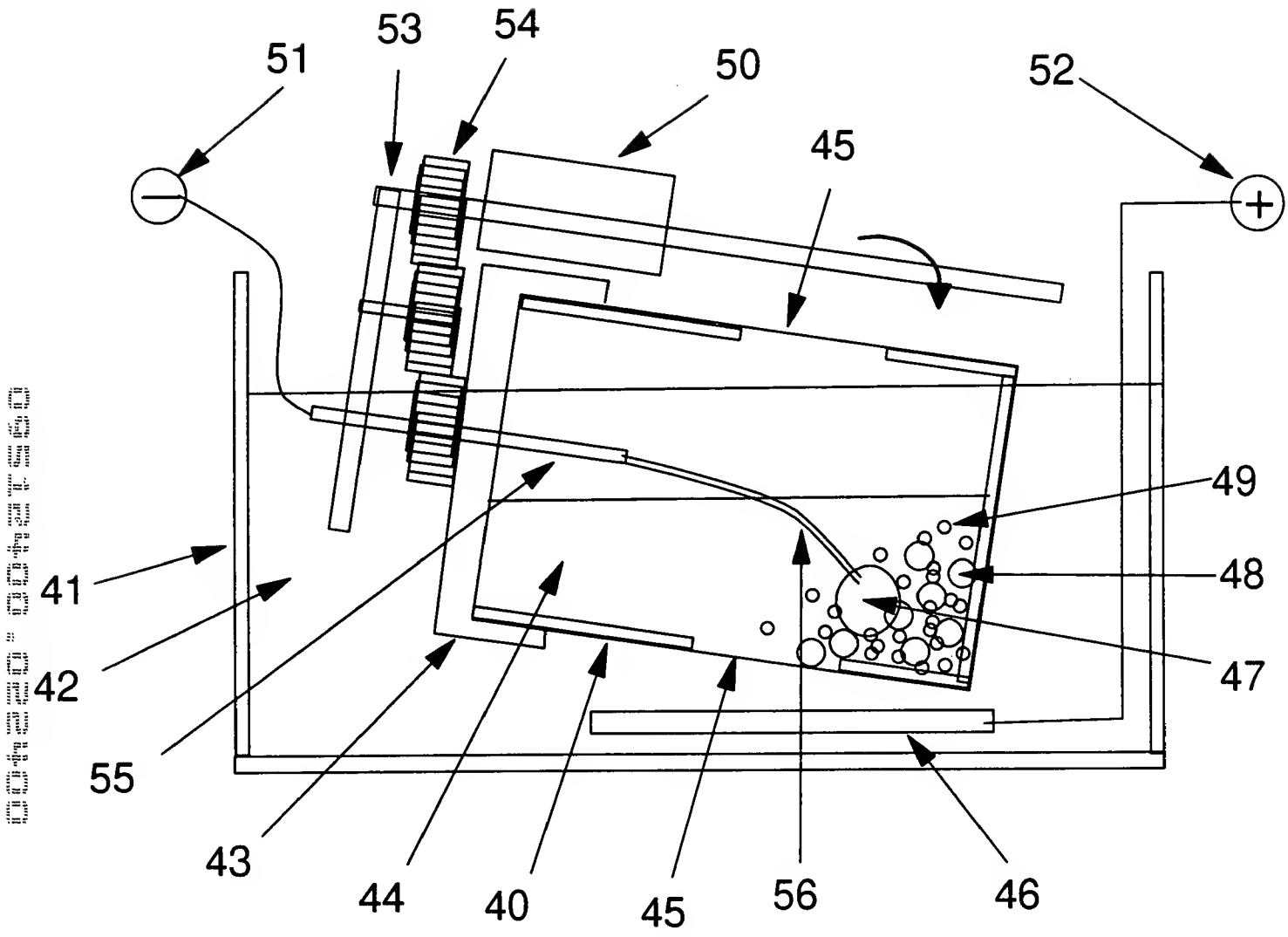
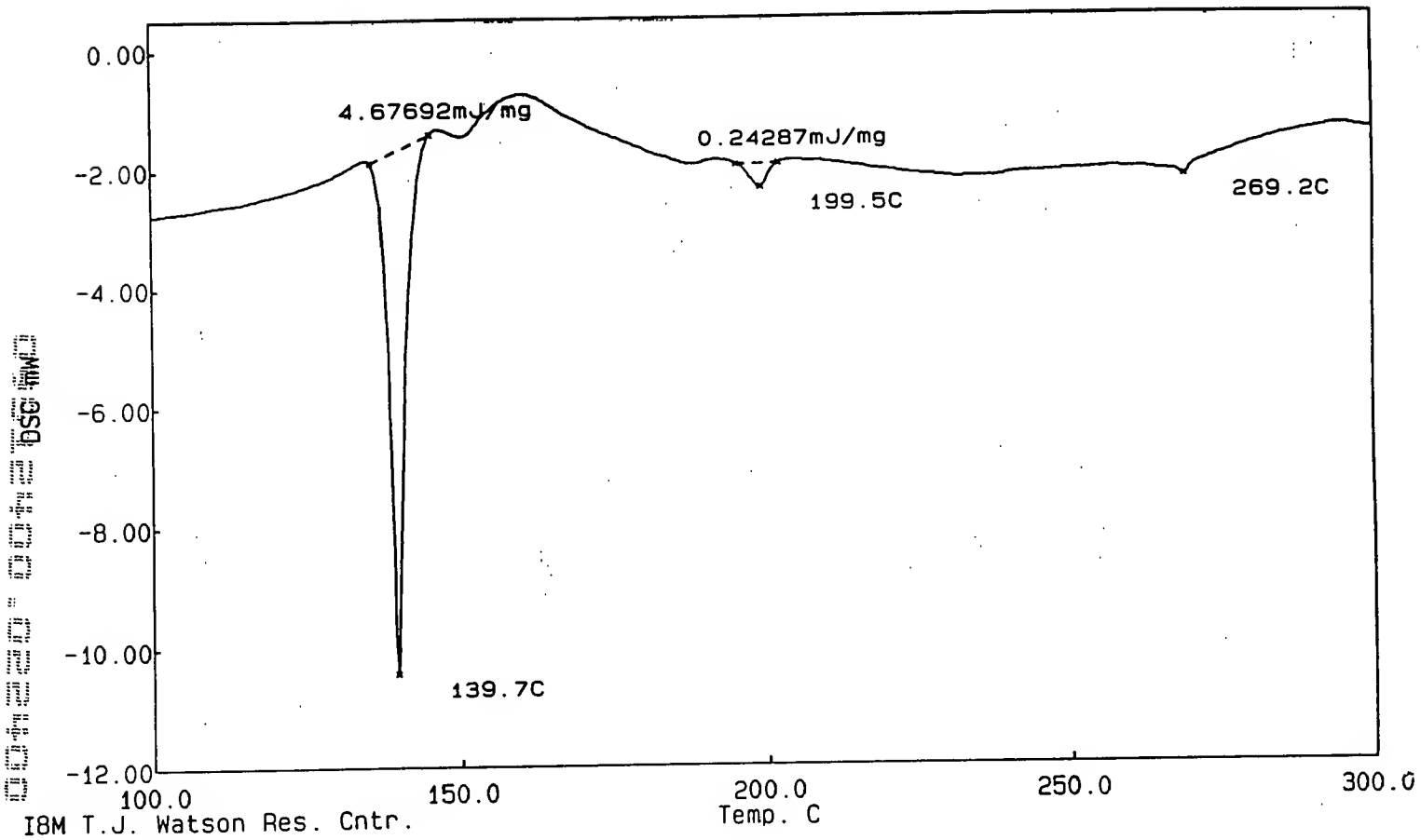


Figure 4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-6.00
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-12.00
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269.2C
139.7C
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150.0
200.0
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300.0
Temp. C
DSC mW
IBM T.J. Watson Res. Cntr.

Figure 5

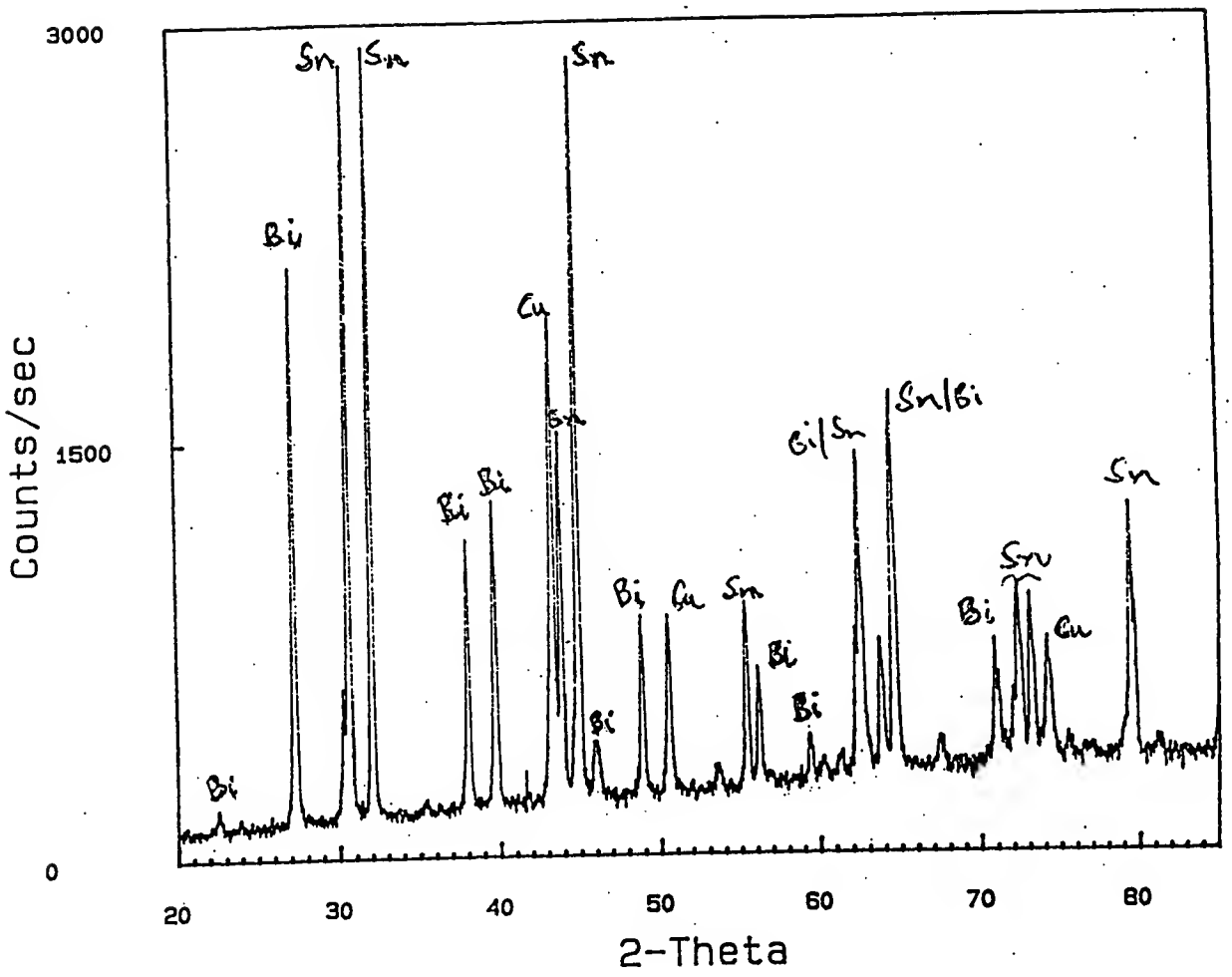

Figure 6